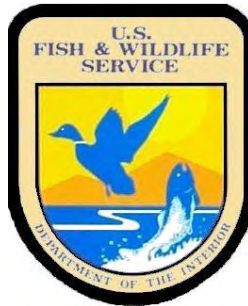


The Road Inventory of Gavins Point National Fish Hatchery Yankton, SD



Prepared By:
Federal Highway Administration
Central Federal Lands Highway Division
06/2008



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INTRODUCTION

The Transportation Equity Act for the 21st Century (Public Law 105-178) created the Refuge Roads Program. Refuge roads are those public roads that provide access to or within a unit of the National Wildlife Refuge System and for which title and maintenance responsibility is vested in the United States Government. Funds from the Highway Trust Fund are available for refuge roads and can be used by the station to pay the cost of:

- (a) Maintenance and improvements of refuge roads.
- (b) Maintenance and improvements of:
 - (1) Adjacent vehicle parking areas
 - (2) Provision for pedestrians and bicycles and
 - (3) Construction and reconstruction of roadside rest areas that are located in or adjacent to wildlife refuges
- (c) Administrative costs associated with such maintenance and improvements.

The funds available for refuge roads are to be disbursed based on the relative needs of the various refuges in the National Wildlife Refuge System, and taking into consideration:

- (a) The comprehensive conservation plan for each refuge;
- (b) The need for access as identified through land use planning; and
- (c) The impact of land use planning on existing transportation facilities.

To determine the relative needs of the U.S. Fish and Wildlife Service, the Federal Highway Administration (FHWA) was asked to inventory all public access roads and parking lots and provide a condition assessment of each. In 2008 the inventory was expanded to include administrative (service use only) roads and parking lots. An FHWA representative meets with refuge personnel to identify route segments and assign route numbers and functional classifications (See Appendix) for each route. All roads and parking lots are mapped using Trimble GPS units and visually assessed for condition using the RSL method of evaluation developed at Utah State University (See Appendix). Culverts, Gates, Guardrails and Low Water Crossings are also mapped and inspected for any obvious defects.

An estimate is provided, in year 2008 dollars, based on the condition determined by the rating system. Estimates are based upon data and location factors from the 2008 RS Means Heavy Construction Cost Data 22nd Annual Edition. Cost estimates should be evaluated on a case-by-case basis when being used for programming purposes.

Native Surfaced roads and parking lots already inventoried will not be re-inventoried and will not appear individually in report chapters 5, 6 and 8. Mileages and areas of native surfaced roads and parking lots will still appear in all summaries in the report and will remain in the road inventory database. In addition to this report, the FHWA will furnish the condition ratings of each route and segment to the Fish and Wildlife Service in a Microsoft Access database so the data can be included in their Real Property Inventory.

Gavins Point National Fish Hatchery

Summaries

Route Miles and Percentages by Functional Class and Condition

F. C.	Condition Rating (Based on RSL)*										TOTAL MILES
	Excellent		Good		Fair		Poor		Failed		
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
I					0.27	100%					0.27
II					0.27	100%					0.27
III											
IV	4.23	92.4%	0.28	6.1%	0.07	1.5%					4.58
V											
Totals	4.23	82.6%	.28	5%	0.61	11.9%					5.12

*For a description of condition ratings for the various surface types see the Appendix.

Route Miles and Percentages by Surface Type and Condition

S. T.	Paved Condition Rating [Condition(RSL)]										TOTAL MILES
	Excellent (19-20)		Good (13-18)		Fair (7-12)		Poor (1-6)		Failed (0)		
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
AS					0.61	100.0%					0.61
CO											
Totals					0.61	100%					0.61

S. T.	Unpaved Condition Rating [Condition(RSL)]										TOTAL MILES
	Excellent (8-10)		Good (5-7)		Fair (3-4)		Poor (1-2)		Failed (0)		
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
GR	2.59	100%									2.59
NA	1.64	85.4%	0.28	14.6%							1.92
PR											
Totals	4.23	93.8%	0.28	6.2%							4.51

Square Footage (Parking Areas)

S. T.	Condition Rating										Total Square Feet
	Excellent		Good		Fair		Poor		Failed		
	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	
AS	2060	2.8%	56707	77.1%	14772	20.1%					73539
CO			8789	100%							8789
GR	2936	43.7%	3787	56.3%							6723
NA			1407	16.7%	7040	83.3%					8447
PR											
Totals	4996	5.1%	70690	72.5%	21812	22.4%					97498

Gavins Point National Fish Hatchery

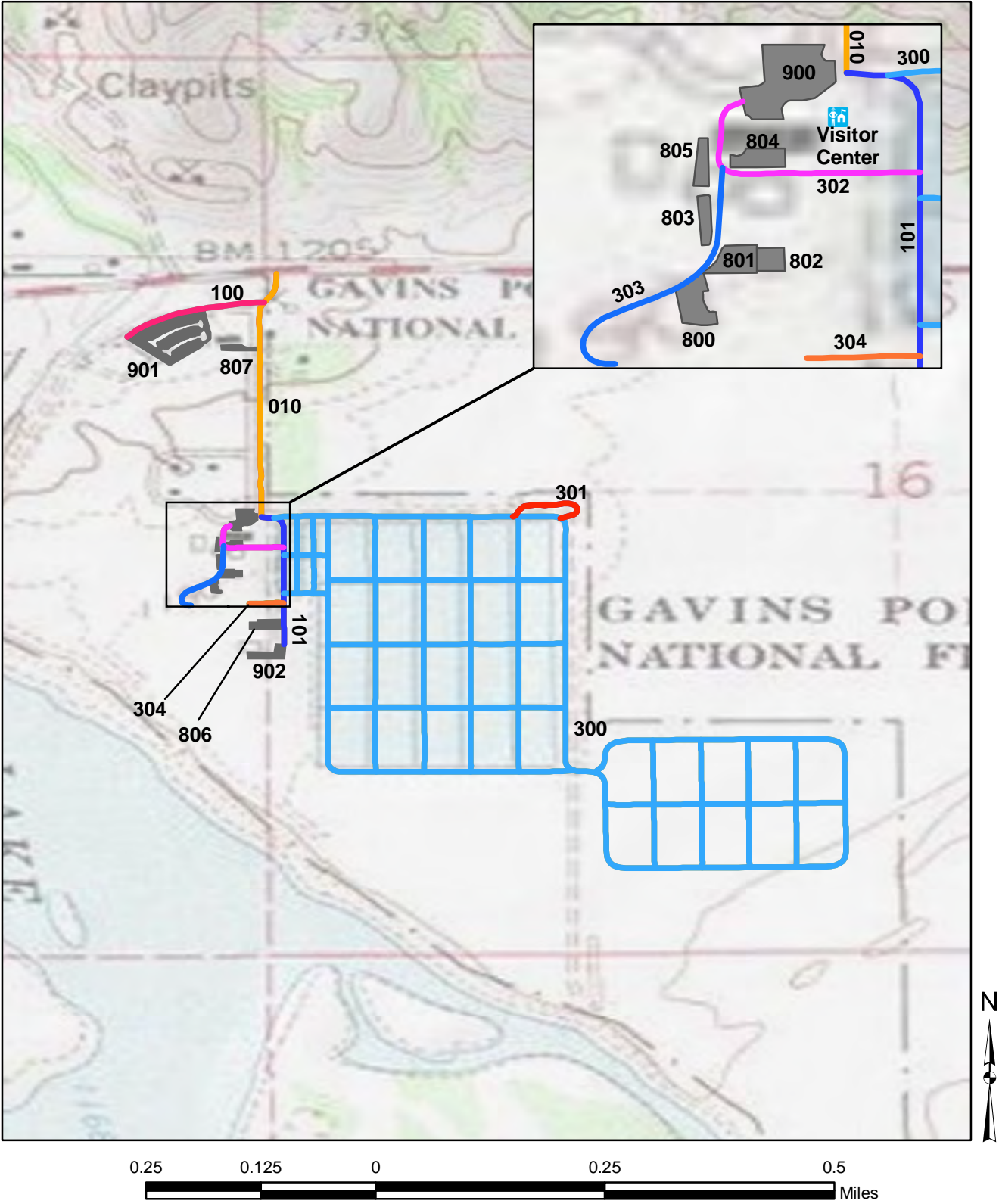
Summaries

Route Miles and Percentages by Use Type and Condition

USE TYPE	Road Condition Rating: Public/Administrative Use										TOTAL MILES	PERCENT TOTAL MILES
	Excellent		Good		Fair		Poor		Failed			
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%		
Public (FC I-III)					0.54	100.0%					.54	11%
Admin (FC IV-V)	4.23	92.4%	0.28	6.1%	0.07	1.5%					4.58	89%
Totals	4.23	82.6%	.28	5%	0.61	11.9%					5.12	

USE TYPE	Parking Condition Rating										Total Square Feet	PERCENT TOTAL SF
	Excellent		Good		Fair		Poor		Failed			
	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%		
Public			64179	86.2%	10252	13.8%					74431	76%
Admin	4996	21.7%	6511	28%	11560	50.1%					23067	24%
Totals	4996	5.1%	70690	72.5%	21812	22.4%					97498	

GAVINS POINT NATIONAL FISH HATCHERY ROUTE LOCATION MAP



Gavins Point National Fish Hatchery-64220-ROUTE IDENTIFICATION LIST (NUMERIC)

Shading Color Key:

White = Paved Routes
Yellow = Unpaved Routes

RTE #	Asset Number	ROUTE NAME	RTE MI	ROUTE DESCRIPTION	PAVED MI	UN-PAVED MI	LANES	FC
010	10040835	Hatchery Access Road	0.27	From Highway 52, to Hatchery Headquarters Parking Area (Rte 900)	0.27	-	2	1
100	10040835	Aquarium Access Road	0.12	From Hatchery Access Road (Rte 010) to Aquarium Parking (Rte 901)	0.12	-	2	2
101	10040835	Field Research Station Access Road	0.15	From Hatchery Parking Area (Rte 900) to Field Research Station Parking Area (902)	0.15	-	1	2
300	10030110	Pond Access Road	4.31	From Field Research Station Access Road (Route 101) around NFH ponds	-	4.31	1	4
301	10030110	North Shed Access	0.08	From Pond Access Road (Rte 300) to end of loop	-	0.08	1	4
302	10053370	Visitor Center Service Road	0.07	From Field Research Station Access Road (Rte 101) to Hatchery Headquarters Parking Area (Rte 900)	0.07	-	2	4
303	10053370	T/E Access Road	0.09	From Visitor Center Service Road (Route 302) to end of route at building	-	0.09	1	4
304	10030118	T/E Access Road East	0.03	From Field Research Station Access Road (Rte 101) to shop building	-	0.03	2	4

Gavins Point National Fish Hatchery-64220-ROUTE IDENTIFICATION LIST (PARKING)

Shading Color Key:

Green = Unpaved Parking Lots

Blue = Paved Parking Lots

RTE #	ASSET NUMBER	ROUTE NAME	RTE SQFT	ROUTE DESCRIPTION	PAVED SQFT	UN-PAVED SQFT
800		T/E Parking	2936		-	2936
801		Endangered Species Building Parking	2435		-	2533
802		Endangered Species East Parking	1407		-	1407
803		Sturgeon Building Parking	1238		-	1254
804	10030117	Shop Parking South	1892		2060	-
805	10030117	Shop Parking West	1142		1317	-
806		Boat Parking Area	6704		-	7040
807	10030117	Aquarium Service Parking	4489		4520	-
900	10030117	Hatchery Headquarters Parking Area	9746		10252	-
901	10051725	Aquarium Parking Area			55390	-
902	10030117	Field Research Station Parking Area	8789		8789	-

CHANGES TO THE FISH AND WILDLIFE SERVICE ROAD INVENTORY REPORT
Gavins Point National Fish Hatchery - 64220

Routes added to previous inventory: No routes added to previous inventory.

	Rte #	Rte Name	
1.			Rte Desc:
			Reason for Addition:
2.			Rte Desc:
			Reason for Addition:
3.			Rte Desc:
			Reason for Addition:

Routes removed from previous inventory: No routes removed from previous inventory.

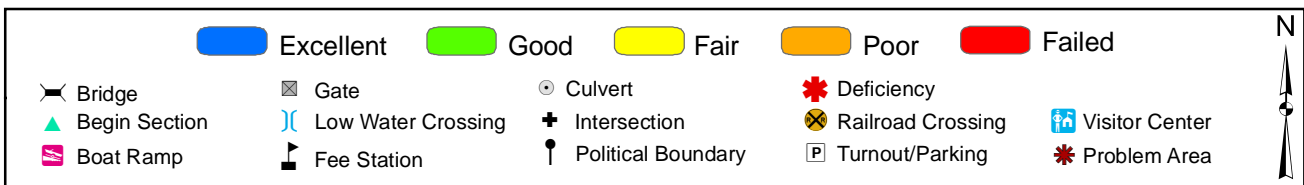
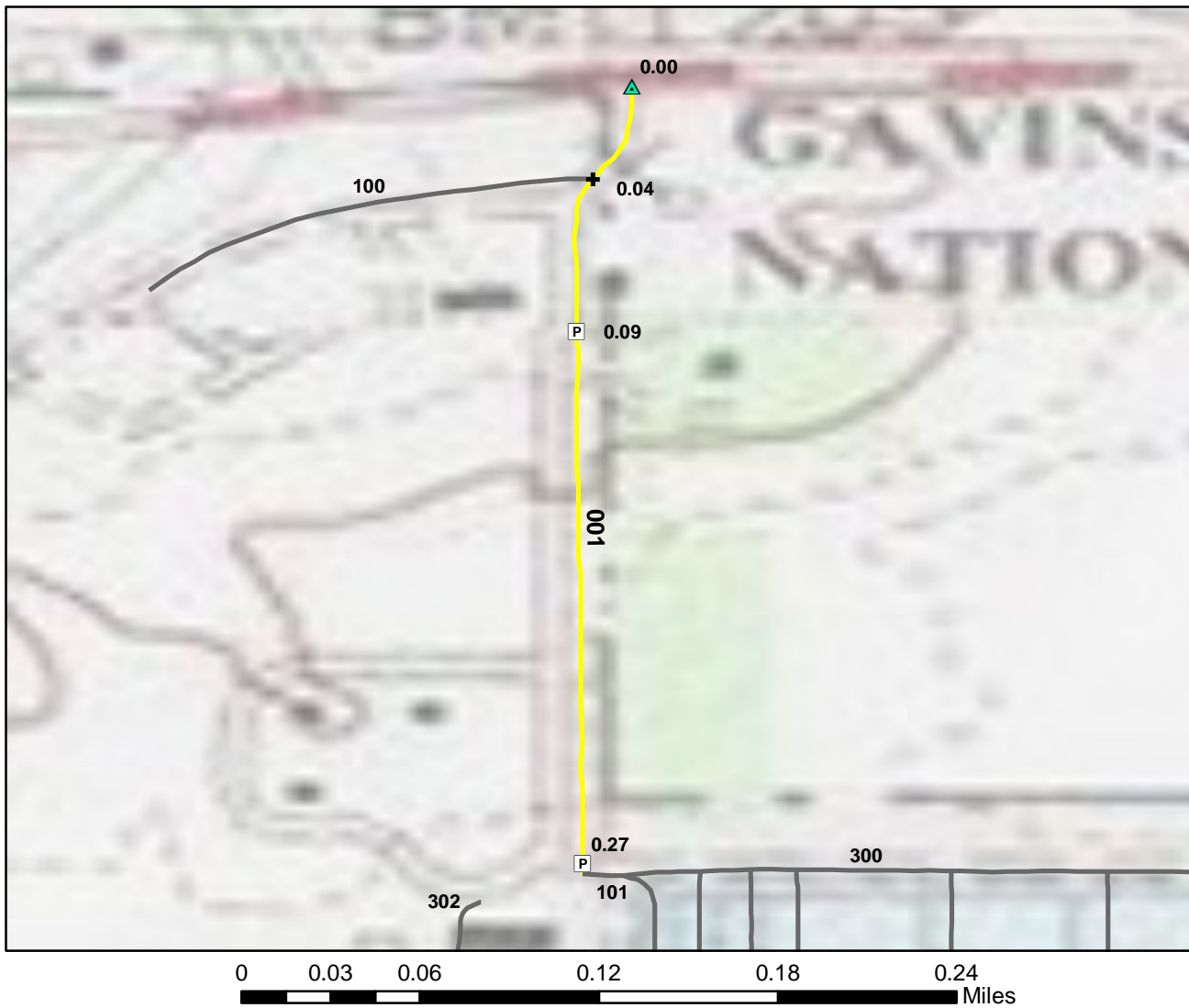
	Rte #	Rte Name	
1.			Rte Desc:
			Reason for Removal:
2.			Rte Desc:
			Reason for Removal:
3.			Rte Desc:
			Reason for Removal:

Routes modified from previous inventory: No routes modified from previous inventory.

	Rte #	Rte Name	
1.			Rte Desc:
			Modification:
2.			Rte Desc:
			Modification:
3.			Rte Desc:
			Modification:

Comments:

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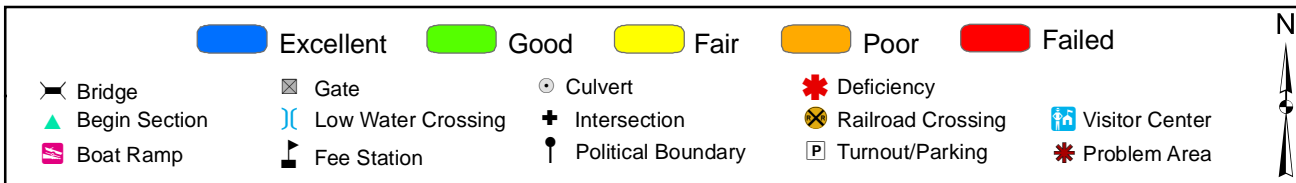


ROUTE: 010 Hatchery Access Road TOTAL LENGTH: 0.27 Miles

ASSET: 10040835

RTE DESCRIPTION: From Highway 52, to Hatchery Headquarters Parking Area (Rte 900).

Section Number	001				
Section Length (miles)	0.27				
Inspection Date	5/17/2008				
Section Information					
Surface Type	Asphalt				
Number of Lanes	2				
Roadway Width (feet)	22				
Roadway Condition Information					
Condition	Fair				
Remaining Service Life (years)	10				
Cost Estimate	\$29800				
CRV	\$329500				

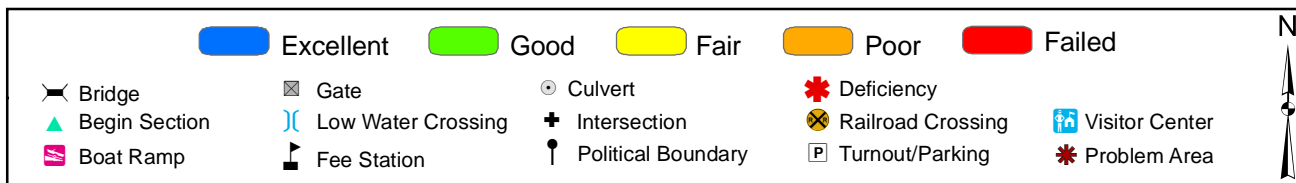
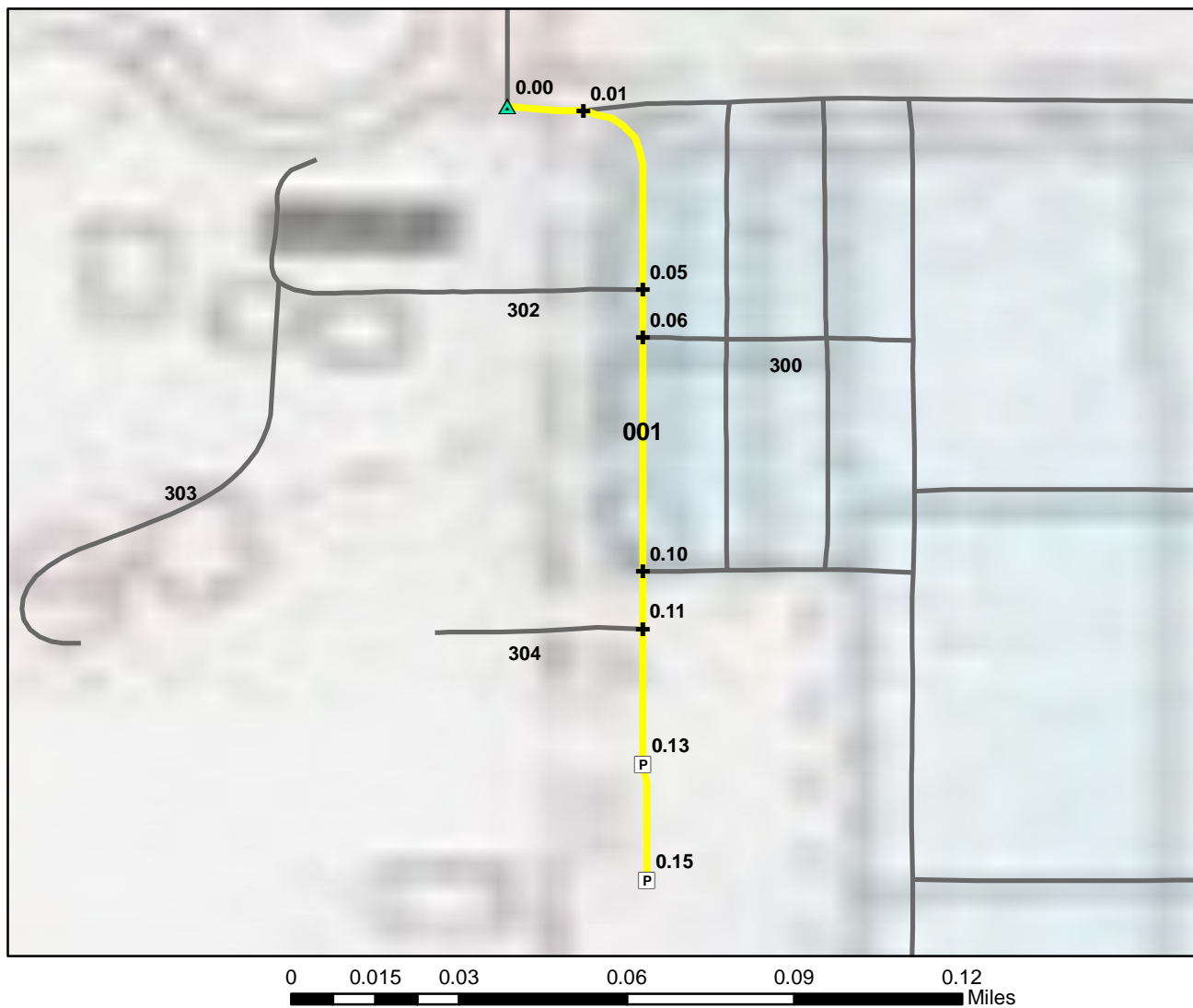


ROUTE: 100 Aquarium Access Road TOTAL LENGTH: 0.12 Miles

ASSET: 10040835

RTE DESCRIPTION: From Hatchery Access Road (Route 010) to Aquarium Parking (Route 901).

Section Number	001				
Section Length (miles)	0.12				
Inspection Date	5/17/2008				
Section Information					
Surface Type	Asphalt				
Number of Lanes	2				
Roadway Width (feet)	16				
Roadway Condition Information					
Condition	Fair				
Remaining Service Life (years)	10				
Cost Estimate	\$13200				
CRV	\$146400				

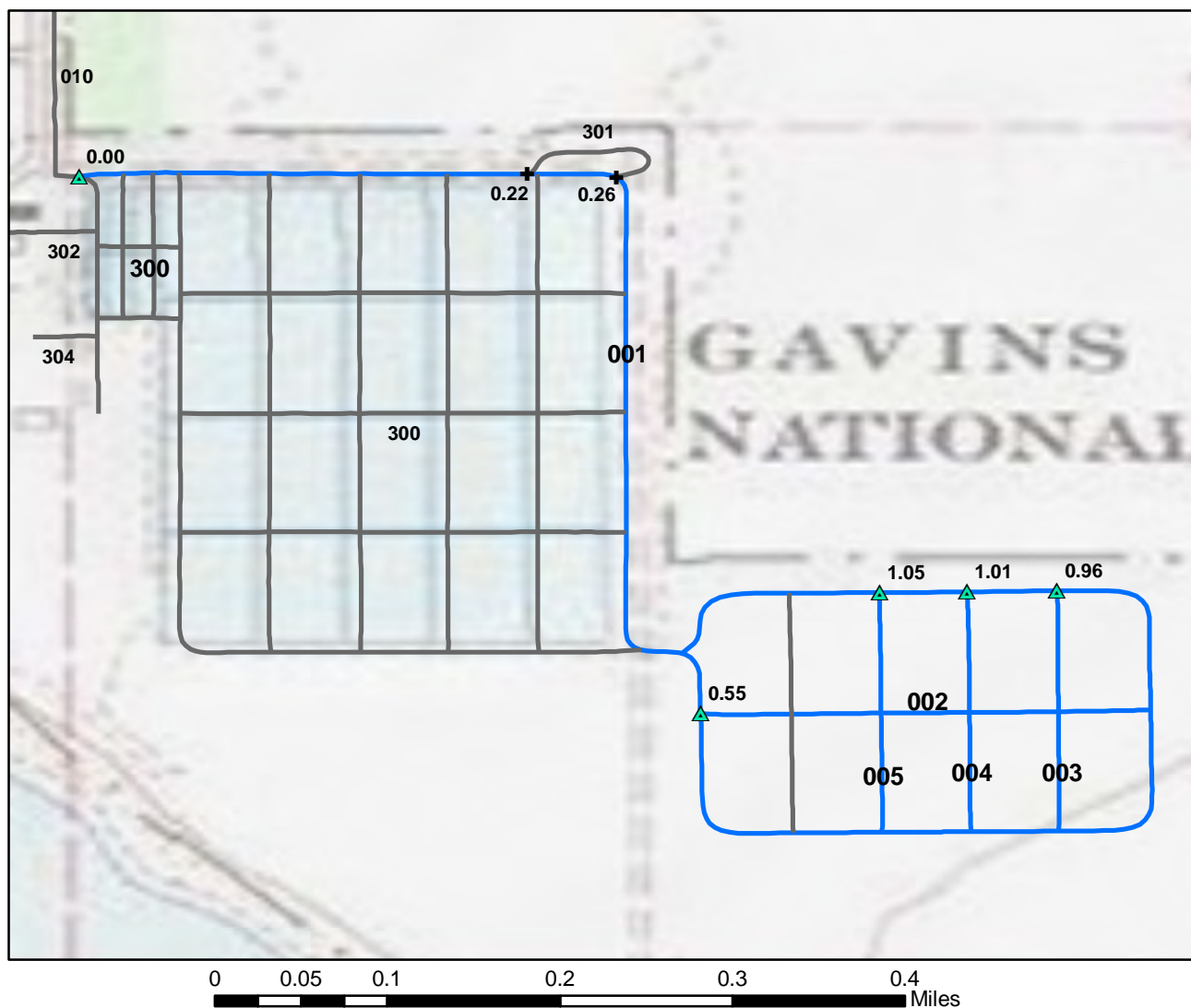


ROUTE: 101 Field Research Station Access Road TOTAL LENGTH: 0.15 Miles

ASSET: 10040835

RTE DESCRIPTION: From Hatchery Parking Area (Rte 900) to Field Research Station Parking Area (902).

Section Number	001				
Section Length (miles)	0.15				
Inspection Date	5/17/2008				
Section Information					
Surface Type	Asphalt				
Number of Lanes	1				
Roadway Width (feet)	14				
Roadway Condition Information					
Condition	Fair				
Remaining Service Life (years)	10				
Cost Estimate	\$16500				
CRV	\$183000				



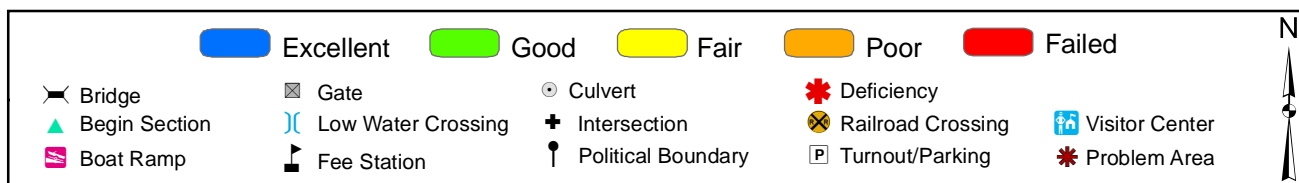
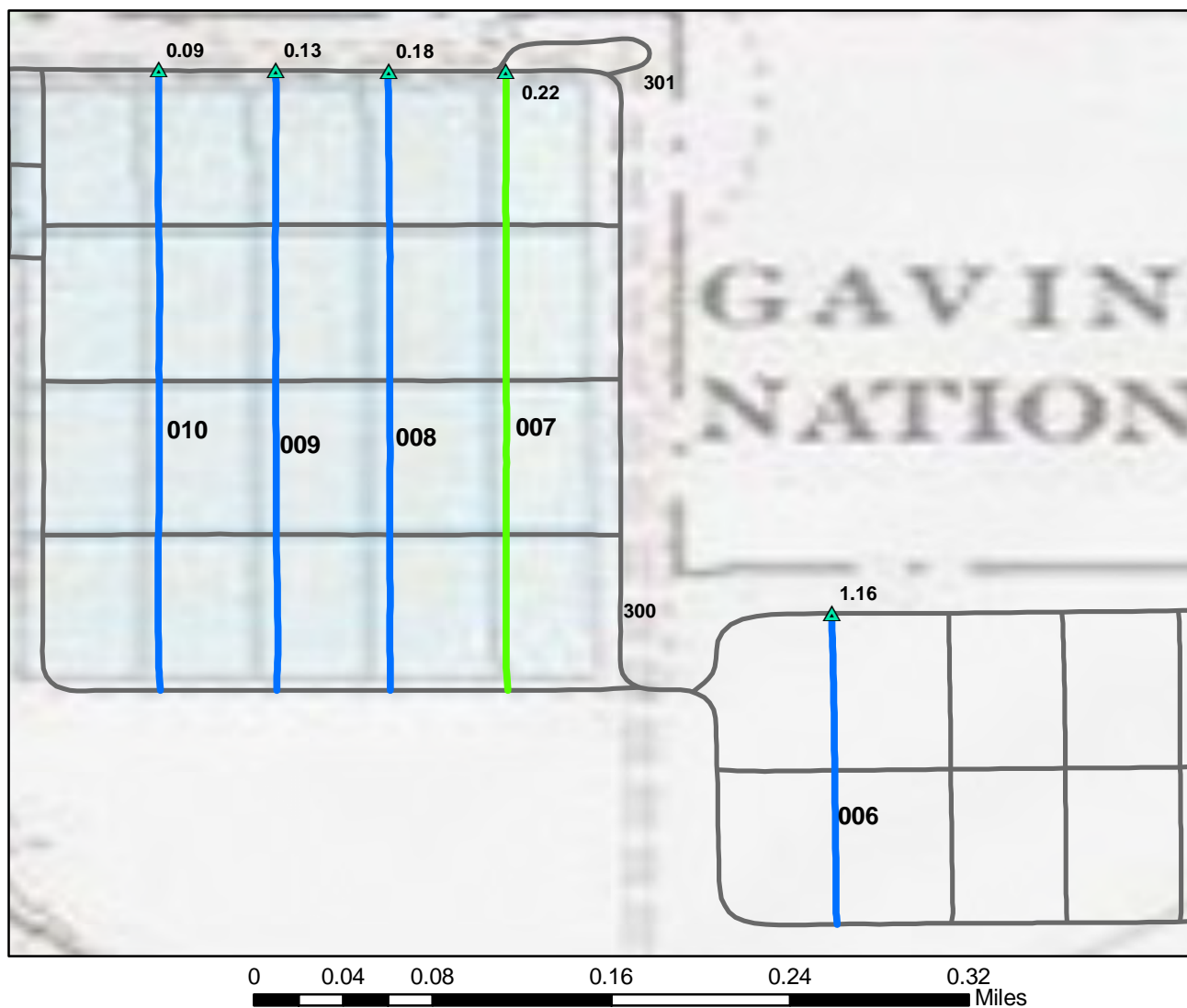
ROUTE: 300 Pond Access Road

TOTAL LENGTH: 4.31 Miles

ASSET: 10030110

RTE DESCRIPTION: From Field Research Station Access Road (Route 101) around NFH ponds.

Section Number	001	002	003	004	005
Section Length (miles)	1.16	0.19	0.14	0.14	0.14
Inspection Date	5/17/2008	5/17/2008	5/17/2008	5/17/2008	5/17/2008
Section Information					
Surface Type	Gravel	Gravel	Native	Native	Native
Number of Lanes	1	1	1	1	1
Roadway Width (feet)	12	10	10	10	10
Roadway Condition Information					
Condition	Excellent	Excellent	Excellent	Excellent	Excellent
Remaining Service Life (years)	9	10	9	9	10
Cost Estimate	\$0	\$0	\$0	\$0	\$0
CRV	\$815900	\$133600	\$50900	\$50900	\$50900



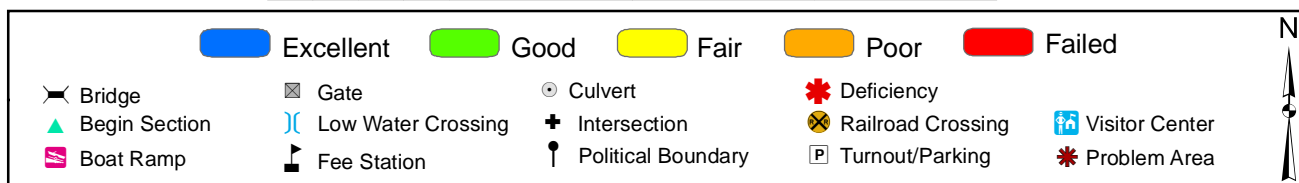
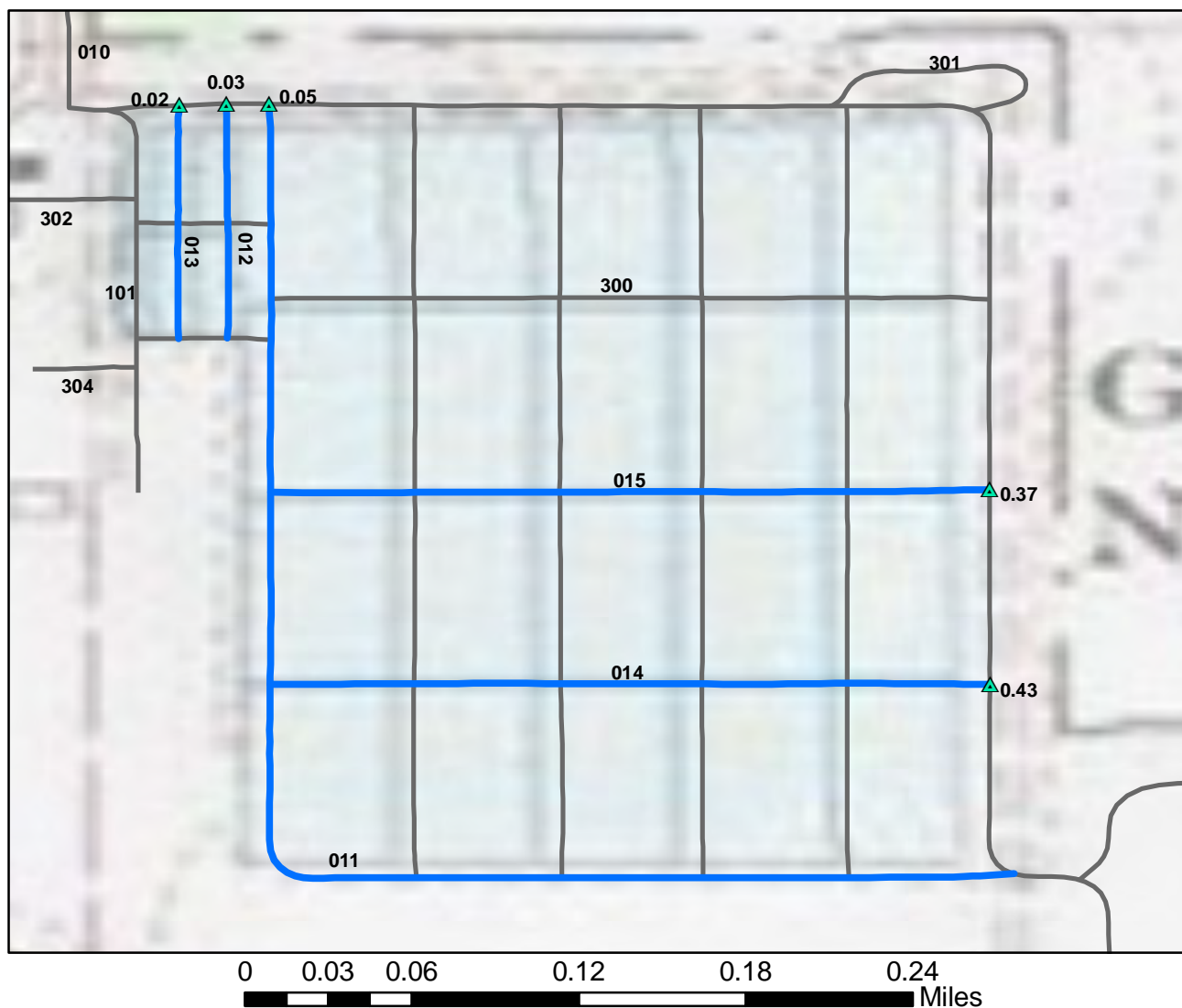
ROUTE: 300 Pond Access Road

TOTAL LENGTH: 4.31 Miles

ASSET: 10030110

RTE DESCRIPTION: From Field Research Station Access Road (Route 101) around NFH ponds.

Section Number	006	007	008	009	010
Section Length (miles)	0.14	0.28	0.28	0.28	0.28
Inspection Date	5/17/2008	5/17/2008	5/17/2008	5/17/2008	5/17/2008
Section Information					
Surface Type	Native	Native	Native	Native	Native
Number of Lanes	1	1	1	1	1
Roadway Width (feet)	10	10	10	10	10
Roadway Condition Information					
Condition	Excellent	Good	Excellent	Excellent	Excellent
Remaining Service Life (years)	9	7	9	10	10
Cost Estimate	\$0	\$500	\$0	\$0	\$0
CRV	\$50900	\$101900	\$101900	\$101900	\$101900



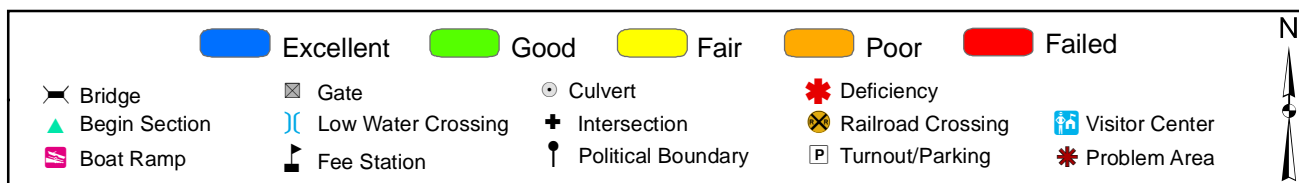
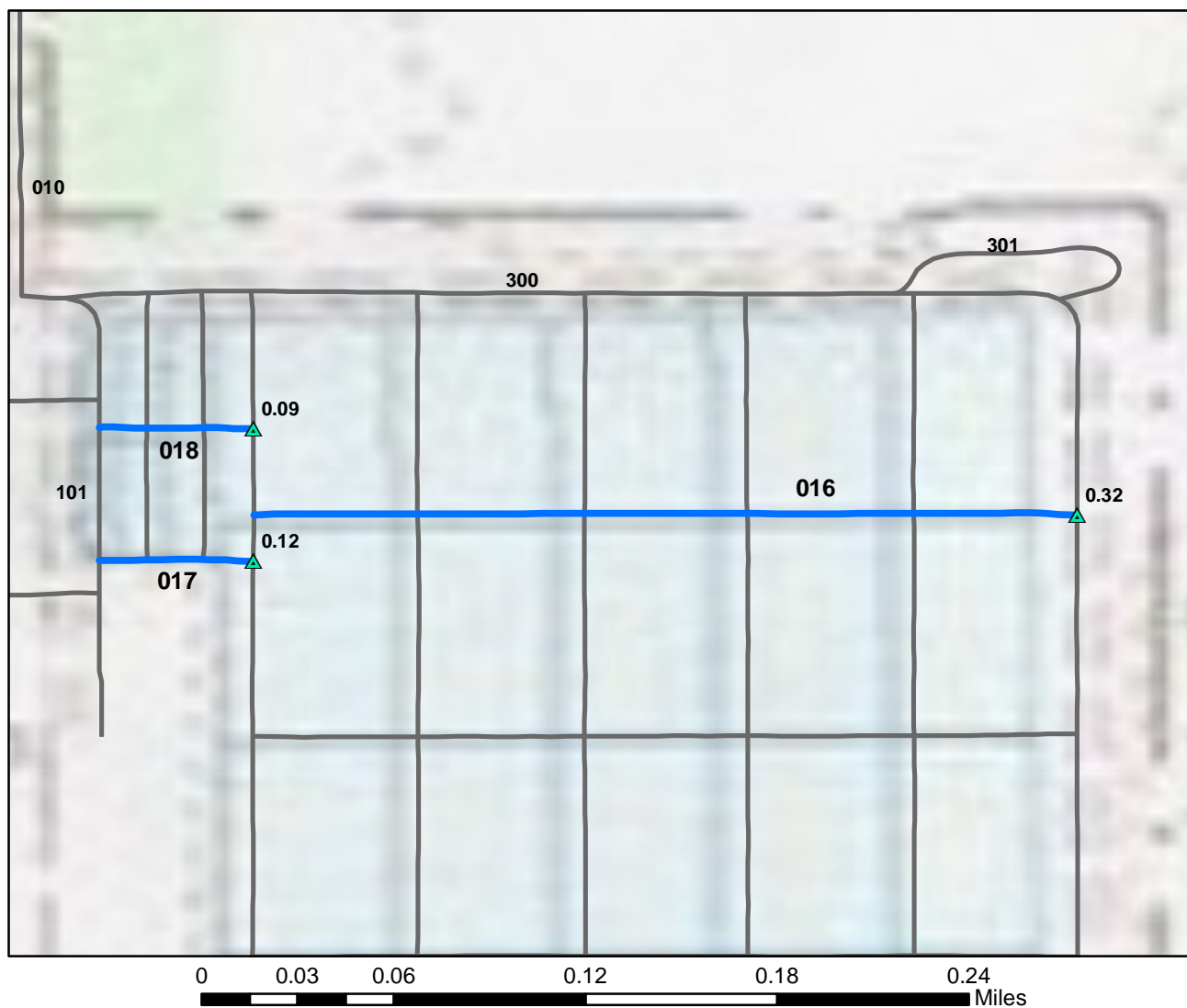
ROUTE: 300 Pond Access Road

TOTAL LENGTH: 4.31 Miles

ASSET: 10030110

RTE DESCRIPTION: From Field Research Station Access Road (Route 101) around NFH ponds.

Section Number	011	012	013	014	015
Section Length (miles)	0.47	0.08	0.08	0.19	0.19
Inspection Date	5/17/2008	5/17/2008	5/17/2008	5/17/2008	5/17/2008
Section Information					
Surface Type	Gravel	Native	Native	Gravel	Gravel
Number of Lanes	1	1	1	1	1
Roadway Width (feet)	12	10	10	10	10
Roadway Condition Information					
Condition	Excellent	Excellent	Excellent	Excellent	Excellent
Remaining Service Life (years)	9	10	10	9	9
Cost Estimate	\$0	\$0	\$0	\$0	\$0
CRV	\$330600	\$29100	\$29100	\$133600	\$133600



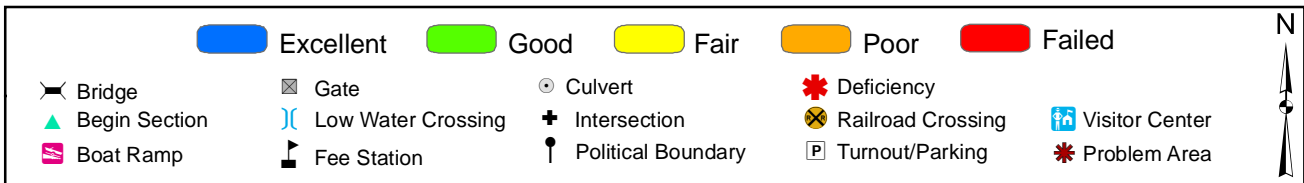
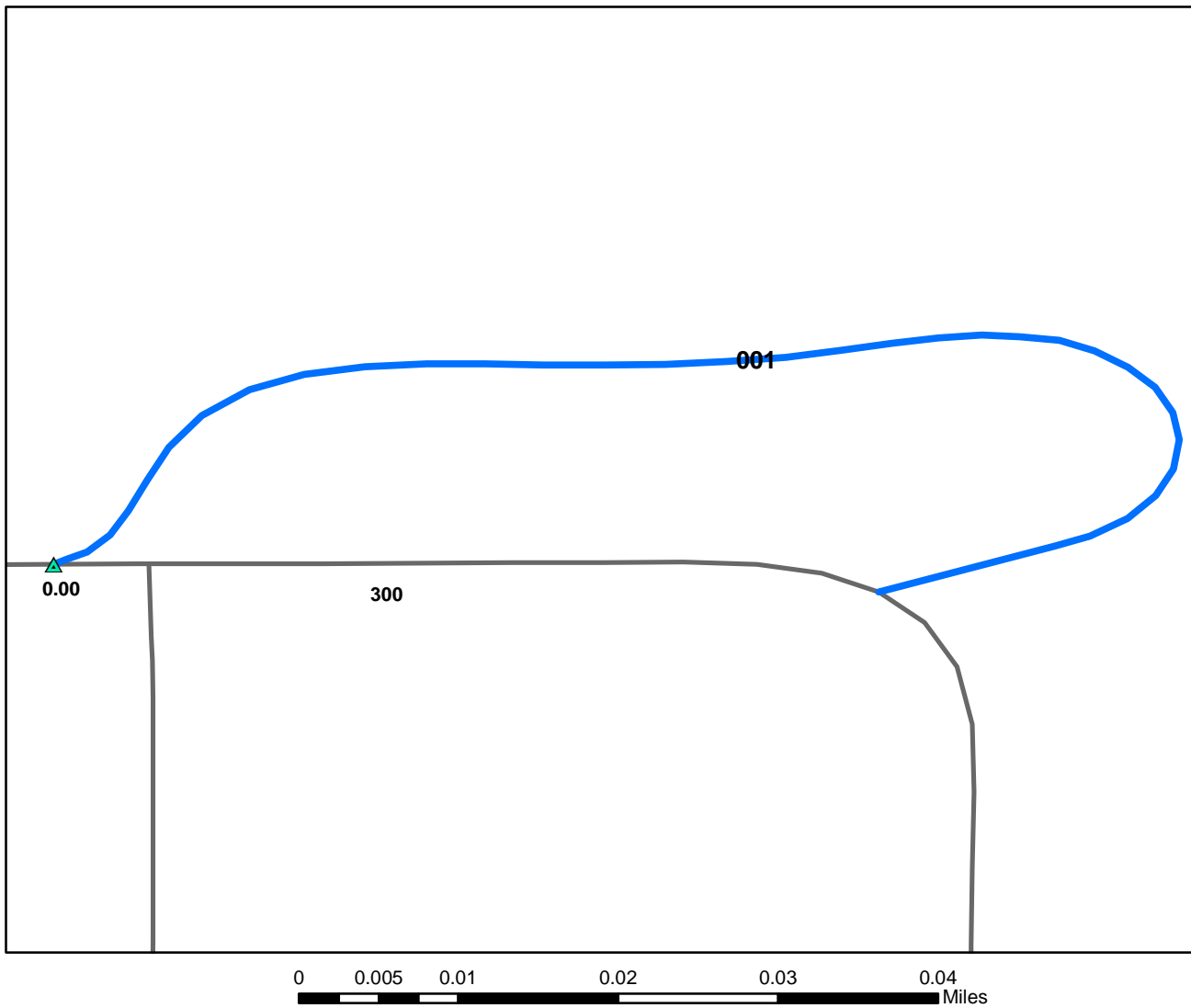
ROUTE: 300 Pond Access Road

TOTAL LENGTH: 4.31 Miles

ASSET: 10030110

RTE DESCRIPTION: From Field Research Station Access Road (Route 101) around NFH ponds.

Section Number	016	017	018		
Section Length (miles)	0.19	0.04	0.04		
Inspection Date	5/17/2008	5/17/2008	5/17/2008		
Section Information					
Surface Type	Gravel	Gravel	Gravel		
Number of Lanes	1	1	1		
Roadway Width (feet)	10	10	10		
Roadway Condition Information					
Condition	Excellent	Excellent	Excellent		
Remaining Service Life (years)	9	10	9		
Cost Estimate	\$0	\$0	\$0		
CRV	\$133600	\$28100	\$28100		

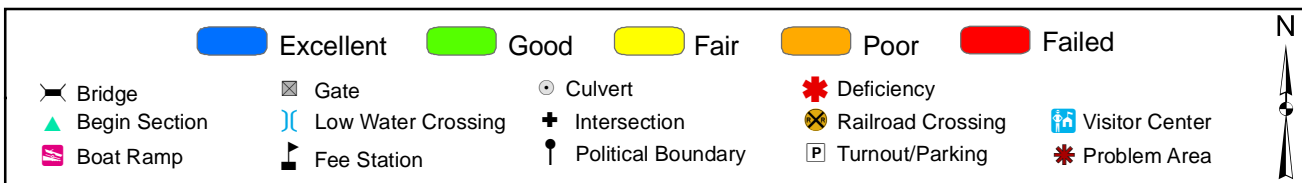
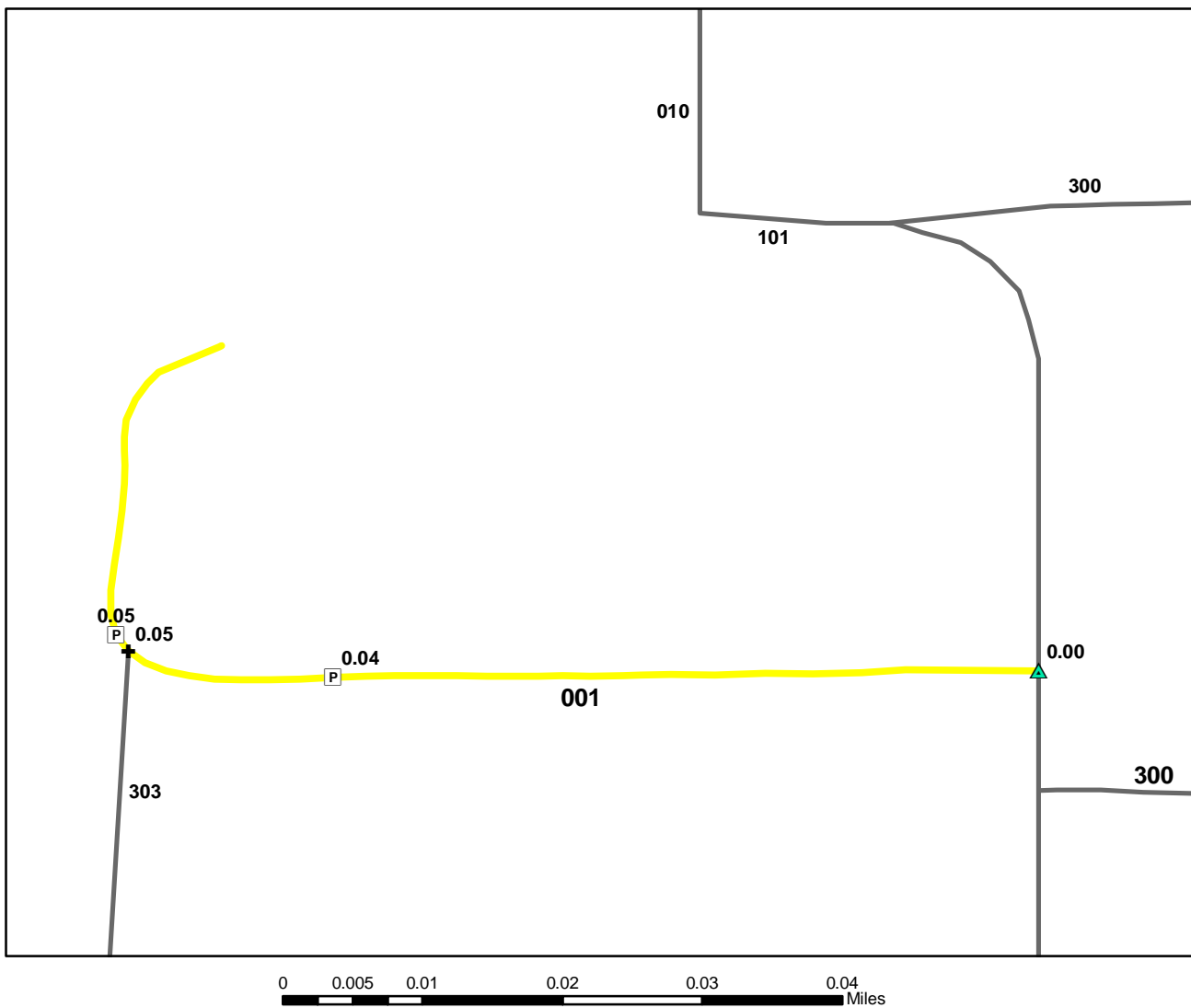


ROUTE: 301 North Shed Access TOTAL LENGTH: 0.08 Miles

ASSET: 10030110

RTE DESCRIPTION: From Pond Access Road (Rte 300) to end of loop.

Section Number	001				
Section Length (miles)	0.08				
Inspection Date	5/17/2008				
Section Information					
Surface Type	Native				
Number of Lanes	1				
Roadway Width (feet)	8				
Roadway Condition Information					
Condition	Excellent				
Remaining Service Life (years)	9				
Cost Estimate	\$0				
CRV	\$29100				

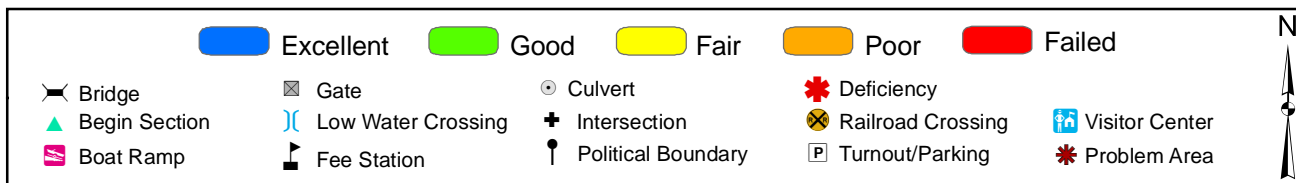
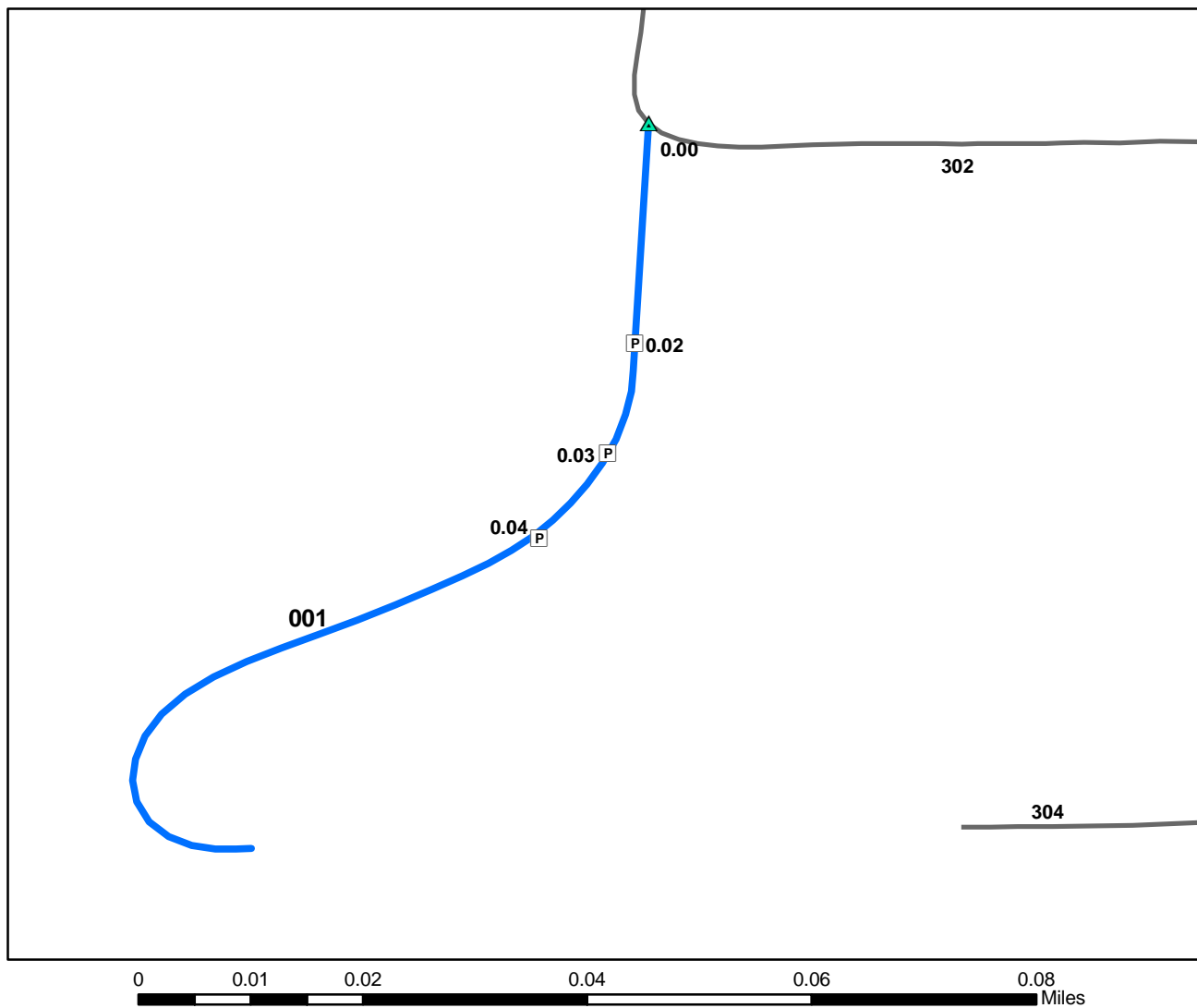


ROUTE: 302 Visitor Center Service Road TOTAL LENGTH: 0.07 Miles

ASSET: 10053370

RTE DESCRIPTION: From Field Research Station Access Road (Route 101) to Hatchery Headquarters Parking Area (Route 900).

Section Number	001				
Section Length (miles)	0.07				
Inspection Date	5/17/2008				
Section Information					
Surface Type	Asphalt				
Number of Lanes	2				
Roadway Width (feet)	20				
Roadway Condition Information					
Condition	Fair				
Remaining Service Life (years)	12				
Cost Estimate	\$7700				
CRV	\$85400				

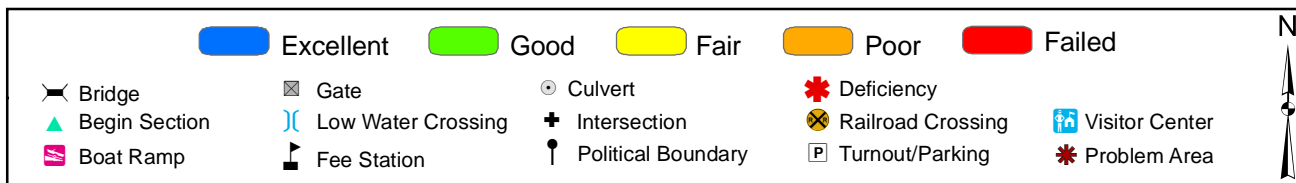
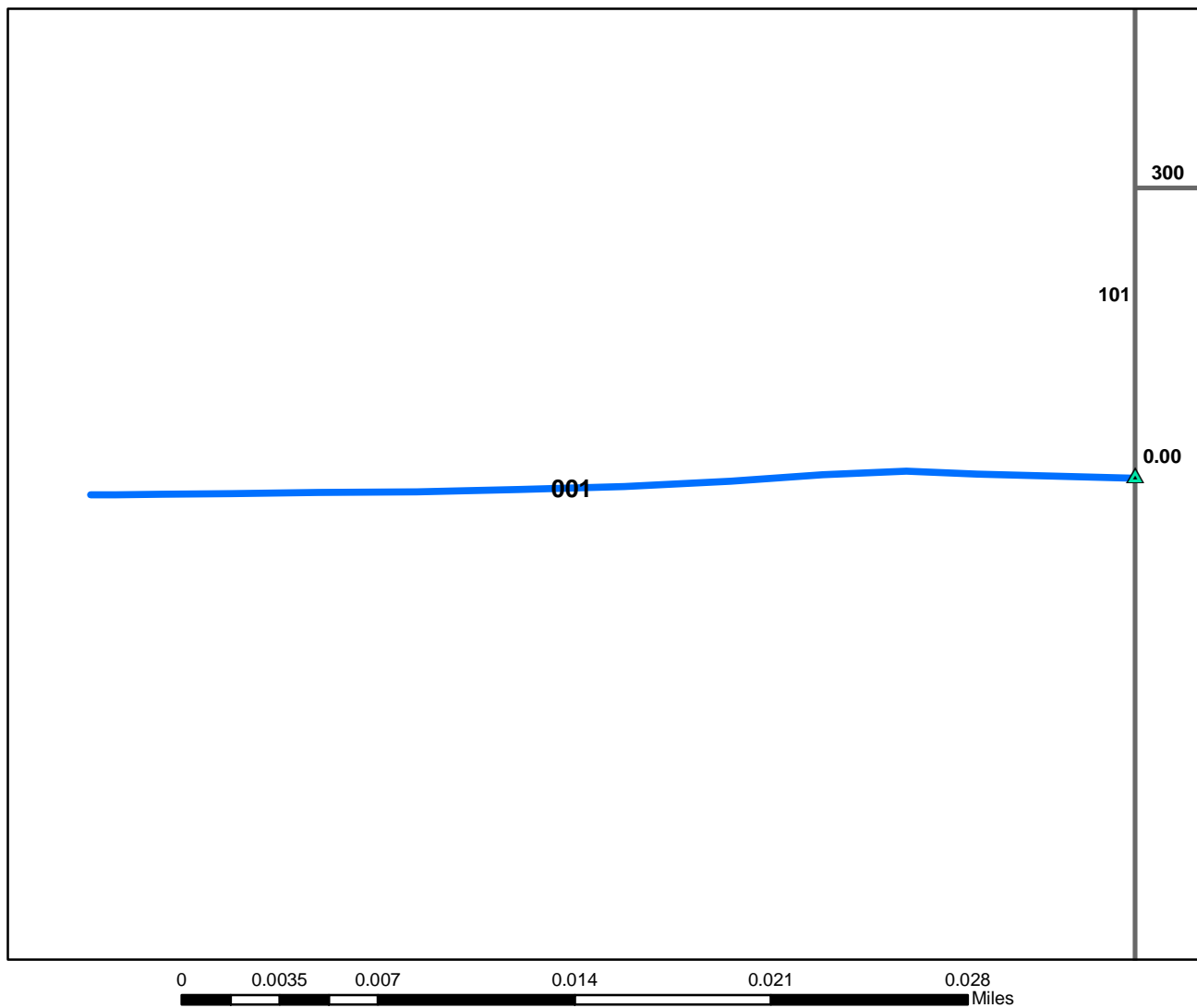


ROUTE: 303 T/E Access Road TOTAL LENGTH: 0.09 Miles

ASSET: 10053370

RTE DESCRIPTION: From Visitor Center Service Road (Route 302) to end of route at Building.

Section Number	001				
Section Length (miles)	0.09				
Inspection Date	5/17/2008				
Section Information					
Surface Type	Gravel				
Number of Lanes	1				
Roadway Width (feet)	12				
Roadway Condition Information					
Condition	Excellent				
Remaining Service Life (years)	10				
Cost Estimate	\$0				
CRV	\$63300				



ROUTE: 304 T/E Access Road East TOTAL LENGTH: 0.03 Miles

ASSET: 10030118

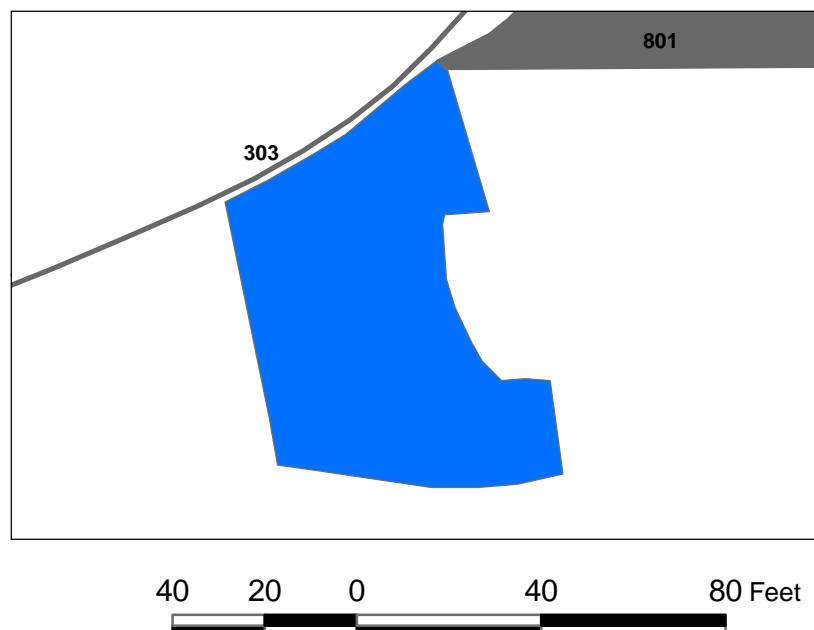
RTE DESCRIPTION: From Field Research Station Access Road (Route 101) to shop building.

Section Number	001				
Section Length (miles)	0.03				
Inspection Date	5/17/2008				
Section Information					
Surface Type	Gravel				
Number of Lanes	2				
Roadway Width (feet)	20				
Roadway Condition Information					
Condition	Excellent				
Remaining Service Life (years)	10				
Cost Estimate	\$0				
CRV	\$21100				

Gavins Point

Route 800: T/E Parking

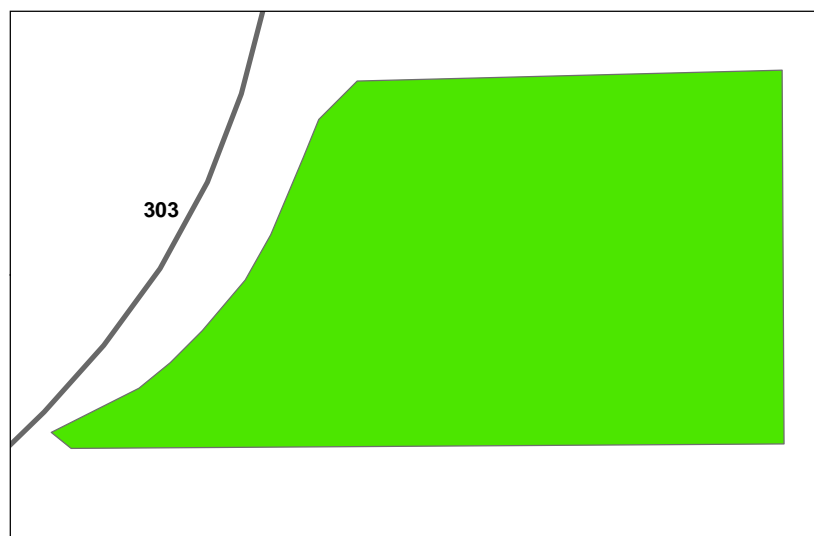
Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
	5/17/2008	Gravel	2820	Excellent	\$0



Gavins Point

Route 801: Endangered Species Building Parking

Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
	5/17/2008	Gravel	2435	Good	\$400

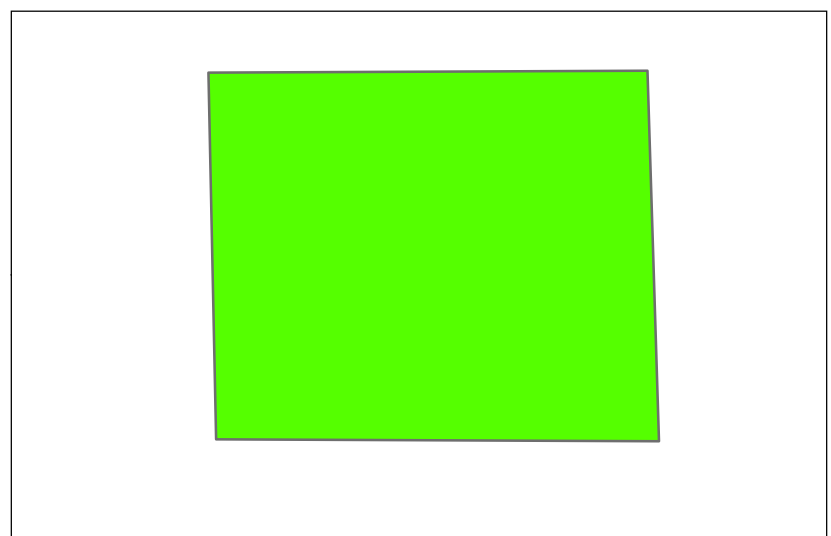


10 5 0 10 20 Feet

Gavins Point

Route 802: Endangered Species East Parking

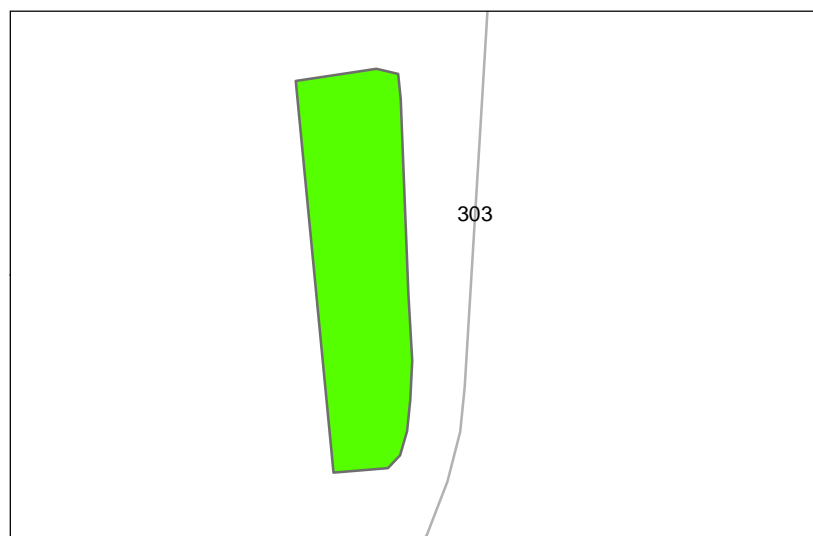
Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
	5/17/2008	Native	1407	Good	\$200



Gavins Point

Route 803: Sturgeon Building Parking

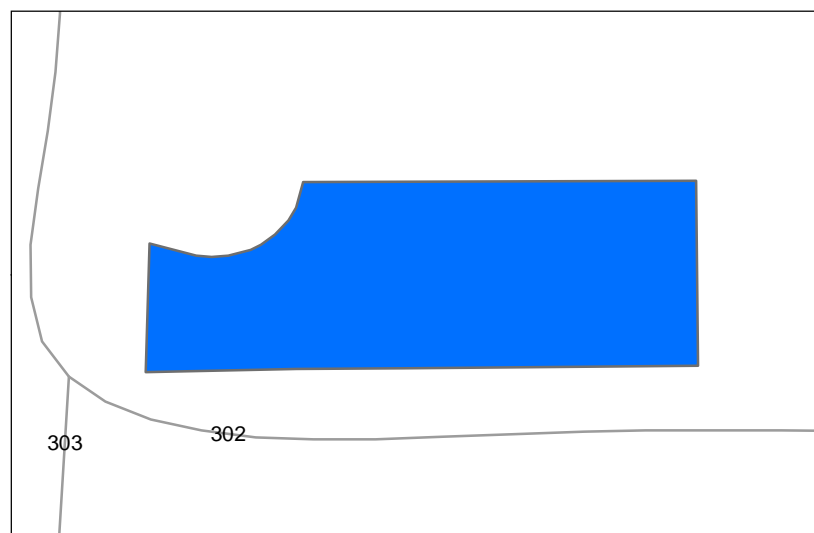
Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
	5/17/2008	Gravel	1238	Good	\$200



Gavins Point

Route 804: Shop Parking South

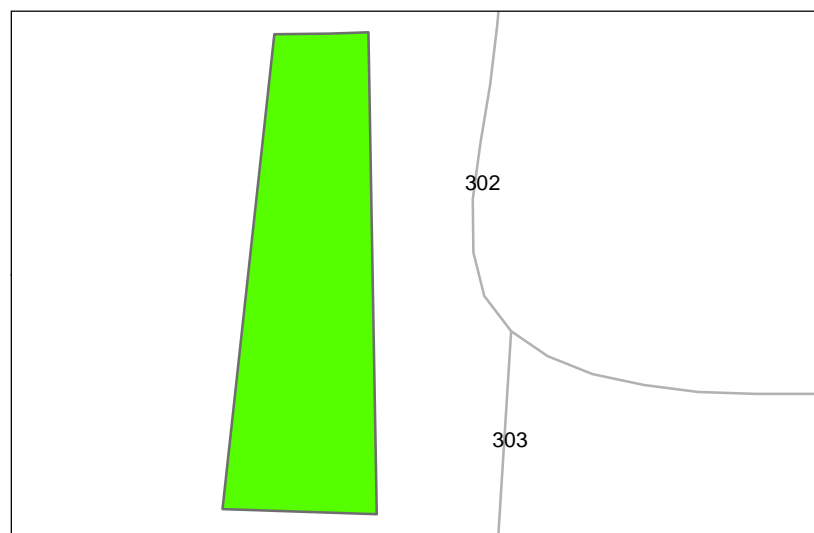
Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
10030117	5/17/2008	Asphalt	1892	Excellent	\$0



Gavins Point

Route 805: Shop Parking West

Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
10030117	5/17/2008	Asphalt	1142	Good	\$200



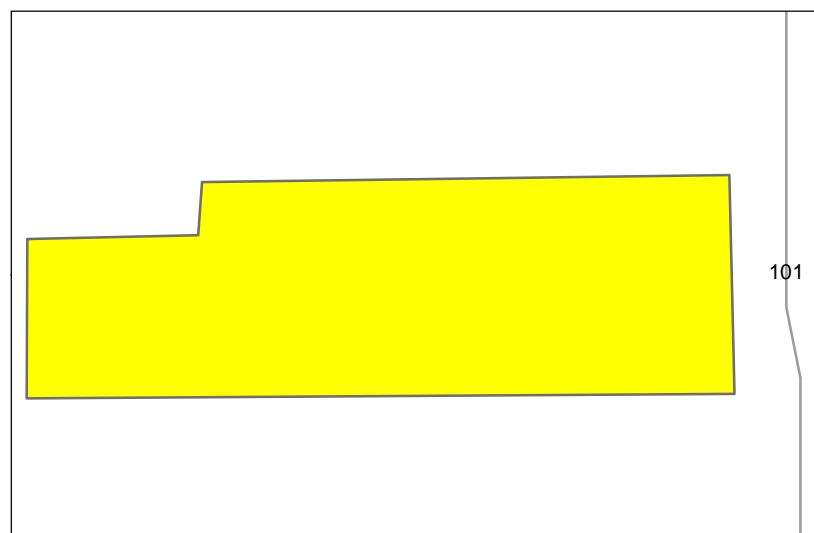
25 12.5 0 25 50 Feet

A scale bar with markings for 25, 12.5, 0, 25, and 50 feet. The bar is black with white markings.

Gavins Point

Route 806: Boat Parking Area

Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
	5/17/2008	Native	6704	Fair	\$1900

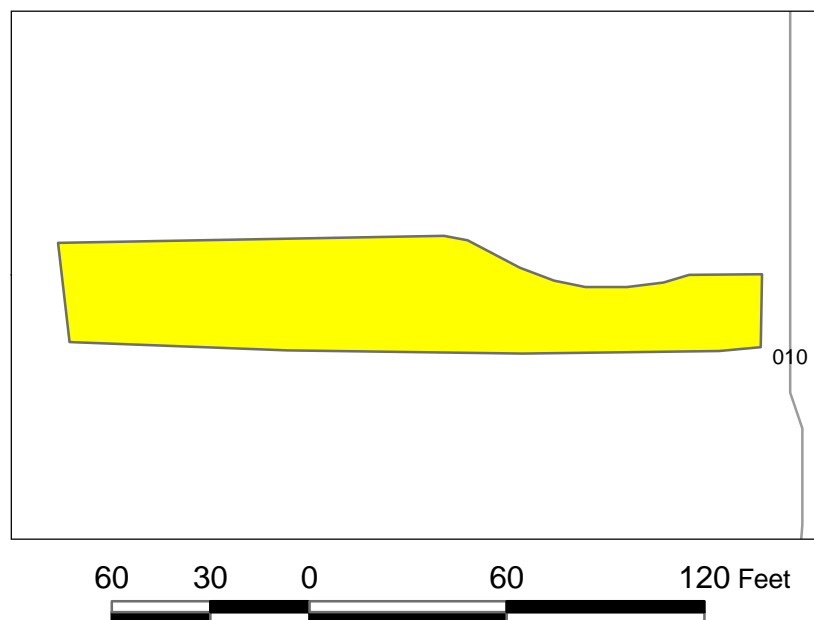


40 20 0 40 80 Feet

Gavins Point

Route 807: Aquarium Service Parking

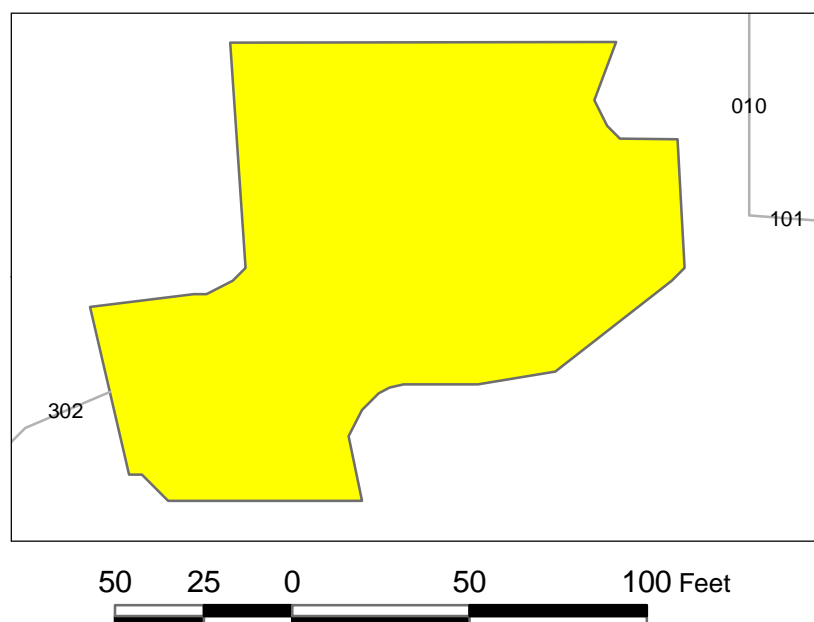
Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
10030117	5/17/2008	Asphalt	4489	Fair	\$4000



Gavins Point

Route 900: Hatchery Headquarters Parking Area

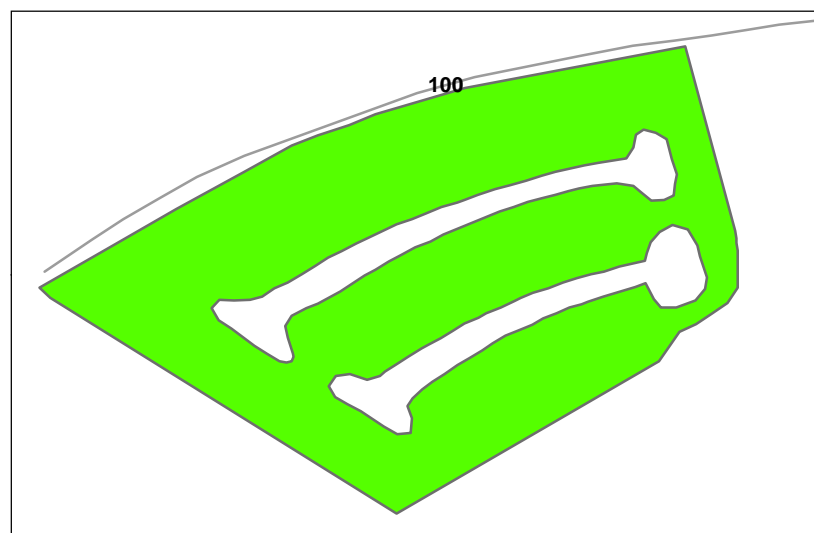
Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
10030117	5/17/2008	Asphalt	9746	Fair	\$8800



Gavins Point

Route 901: Aquarium Parking Area

Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
10051725	5/17/2008	Asphalt	0	Good	\$10800

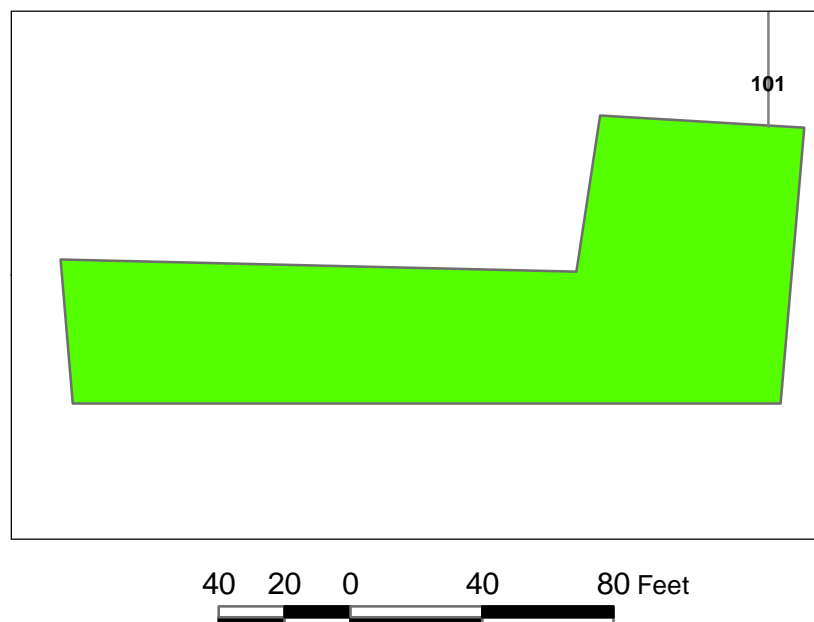


70 35 0 70 140 Feet

Gavins Point

Route 902: Field Research Station Parking Area

Asset Number	Date Visited	Surface Type	Area (sq ft)	Condition	Cost to Improve
10030117	5/17/2008	Concrete	8789	Good	\$1300



Rte #	Milepost	NBIS #	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
No bridges to report					

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 010 ROUTE NAME: Hatchery Access Road



Photo # 5493 - MP 0.00 - Begin Route at Begin Section

ROUTE NUMBER: 100 ROUTE NAME: Aquarium Access Road



Photo # 5494 - MP 0.00 - Begin Route at Begin Section

ROUTE NUMBER: 101 ROUTE NAME: Field Research Station Access Road



Photo # 5486 - MP 0.00 - Begin Route at Begin Section

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5457 - MP 0.00 - Begin Route at Begin Section

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5458 - MP 0.55 - Begin Section 002

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5459 - MP 0.96 - Begin Section 003

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5460 - MP 1.01 - Begin Section 004

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5461 - MP 1.05 - Begin Section 005

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5462 - MP 1.16 - Begin Section 006

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5463 - MP 0.22 - Begin Section 007

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5464 - MP 0.18 - Begin Section 008

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5465 - MP 0.13 - Begin Section 009

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5466 - MP 0.09 - Begin Section 010

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5467 - MP 0.05 - Begin Section 011

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5468 - MP 0.03 - Begin Section 012

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5469 - MP 0.02 - Begin Section 013

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5470 - MP 0.43 - Begin Section 014

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5471 - MP 0.37 - Begin Section 015

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5472 - MP 0.32 - Begin Section 016

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5473 - MP 0.12 - Begin Section 017

ROUTE NUMBER: 300 ROUTE NAME: Pond Access Road



Photo # 5474 - MP 0.09 - Begin Section 018

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 301 ROUTE NAME: North Shed Access



Photo # 5475 - MP 0.00 - Begin Route at Begin Section

ROUTE NUMBER: 302 ROUTE NAME: Visitor Center Service Road



Photo # 5476 - MP 0.00 - Begin Route at Begin Section

ROUTE NUMBER: 303 ROUTE NAME: T/E Access Road



Photo # 5477 - MP 0.00 - Begin Route at Begin Section

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 304 ROUTE NAME: T/E Access Road East



Photo # 5490 - MP 0.00 - Begin Route at Begin Section

Accident Summary

Number of Accidents Reported	Timespan of Accidents	Injuries	Fatalities
0	No Accidents to Report	0	0

APPENDIX

FWS ROAD FUNCTIONAL CLASSIFICATION	
Class I	Principal Refuge Road (Public Roads) - Routes that constitute the main access route, main auto tour route, or thoroughfare for refuge visitors. These routes are accessible by 2WD vehicles. Routes are numbered from 10 to 99.
Class II	Connector Refuge Road (Public Roads) - Routes that provide circulation within the refuge. These routes can also provide access to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, education centers, etc. These routes are accessible by 2WD vehicles. Routes are numbered from 100 to 199.
Class III	Special Purpose Refuge Road (Public Roads) - Roads that provide circulation within special use areas such as campgrounds or public concessionaire facilities or access to remote areas of the refuge. These routes may not be 2WD accessible. Routes are numbered from 200 to 299
Class IV	Administrative Access Road (Administrative Roads) - Routes intended for access to administrative developments or structures such as maintenance offices, employee quarters, or utility areas. These routes are accessible by 2WD vehicles. These routes may restrict access to the general public. Routes are numbered from 300 to 399.
Class V	Restricted Road (Administrative Roads) - Routes normally closed to the public, such as maintenance roads, service roads, patrol roads, and fire breaks. These routes may be open to the public for a short period of time for a special use, such as hunting access. These routes may not be 2WD accessible. Routes are numbered from 400 to 499.

A refuge road system contains those routes within or giving access to a refuge or other unit of the FWS that are administered by the FWS, or by the Service in cooperation with other agencies. The assignment of a functional classification (FC) to a refuge road is not based on traffic volumes or design speed, but on the intended use or function of that route.

DESCRIPTION OF RATING SYSTEM

Rating Data is collected on five different surface types: Asphalt, Concrete, Gravel, Native Improved and Native Primitive. The Utah LTAP Center's Remaining Service Life (RSL) system is used for all surface types. The RSL system is based on the Strategic Highway Research Program's (SHRP) Distress Identification Manual.

Asphalt Rating System

Data is collected on the following distresses and conditions:

- **Fatigue Cracking** - Interconnected cracks forming small irregular shapes.
- **Longitudinal Cracking** - Cracks running parallel with the roadway, in the direction of traffic.
- **Transverse Cracking** - Cracks perpendicular to the roadway, going across the lane or lanes.
- **Block Cracking** - Interconnected cracks forming large blocks.
- **Edge Cracking** - Cracks running along the edge of the pavement surface.
- **Patches** - Original surface repaired with new asphalt patch material.
- **Potholes** - Holes or depressions in the pavement.
- **Rutting** - surface depressions in the wheel paths.
- **Roughness** - Evenness of pavement for serviceability.
- **Drainage** - Ability of the road surface to drain water based on proper slope.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

Fatigue, longitudinal, transverse, block, and edge cracking, along with patching and potholes are rated on a 0 - 9 scale (0 = no distress, 9 = maximum distress). The rating given is based on the extent and the severity of the distress. Rutting, roughness, and drainage are rated on a 0 - 3 scale (0 = excellent, 3 = poor). Each distress type has a given Remaining Service Life (RSL) value (in years) based on the rating for that distress. The distress rating resulting in the lowest RSL value is considered to be the governing distress. That value is assigned as the RSL of the road segment.

Concrete Rating System

Data is collected on the following distresses and conditions:

- **Spalling of Joints** - Chipping, breaking, or cracking of slab edges
- **Joint Seal Damage** - Any damage or condition that enables materials or water to infiltrate into the joint from the surface.
- **Corner Breaks** - A portion of the slab separated by a crack that intersects the adjacent transverse and longitudinal joints, forming approximately a 45° angle to the direction.
- **Broken Slabs** - Faulting and/or cracking localized to individual slabs.
- **Faulting** - Difference in elevation across a crack or joint.
- **Longitudinal Cracking** - Cracks in the pavement running parallel to road.

- **Transverse Cracking** - Cracks in the pavement running perpendicular to the direction of traffic.
- **Patch Deterioration** – Faulting, settling, or cracking of previously placed patch
- **Map Cracking** – A series of cracks that extend only into the upper surface of the Slab

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

The rating procedure for concrete pavement is the same as that for asphalt pavement described previously. Each of the distresses described above are rated on the same 0 – 9 scale. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

Gravel and Native Improved Rating System

Data is collected on the following distresses and conditions:

- **Cross Section (Gravel, Native Improved only)** - Roadway built so that the center is higher than the shoulder, to prevent water from pooling on roadway.
- **Roadside Drainage (Gravel, Native Improved only)** - Roadside ditches and culverts to handle water flow and prevent pooling on the roadside.
- **Corrugations (Washboarding)** - Small trenches or holes developing perpendicular to the roadway.
- **Potholes** - Holes or depressions in the roadway.
- **Rutting** - Depressions running parallel with the roadway, in the wheelpaths.
- **Dust** - Amount of dust caused by traffic.
- **Loose Aggregate (Gravel Only)** - Loose gravel, typically piled up on the roadway edges or centerline.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

The rating procedure for unpaved roads is the same as that for asphalt and concrete pavements described previously. Of the distresses described above, corrugations, potholes, rutting, and loose aggregate are rated on the same 0 – 9 scale previously mentioned. Cross section, roadside drainage, and dust are rated on the same 0 – 3 scale described for asphalt pavement. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

Condition Descriptions by Surface Type

The following definitions are used to describe pavement condition for the various surface types. These are general guidelines for condition indications.

Asphalt

Excellent – Recently constructed or overlaid road where construction or overlay was performed correctly- No maintenance required. RSL = 19-20 years.

Good – Low extent longitudinal and transverse cracks. All cracks are 1/4" or less with little or no crack erosion. Patches are in good condition and applied correctly. Routine Maintenance recommended. RSL = 13-18 years.

Fair - Roads are in good structural condition with little or no fatigue cracking. Longitudinal, transverse, and edge cracking is at medium extent and severity. Block cracking is not extensive. Any patches are in good condition. Preventative maintenance recommended. RSL = 7-12 years.

Poor - Road beginning to show signs of structural distress. Fatigue cracking is medium to high extent and medium severity. Cracking will be severe. Surface may have severe block cracking and show. Patches are in fair to poor condition. There is moderate distortion or rutting and occasional potholes. Rehabilitation recommended. RSL = 1-6 years.

Failed - Road is severely deteriorated. Signs of structural failure appear along with severe and extensive fatigue cracking, distortion, potholes, or extensive patches in poor condition. Reconstruction recommended. RSL = 0 years.

Concrete

Excellent - New pavement. No maintenance required. RSL = 19-20 years

Good - First signs of transverse cracking, patch or repair, more extensive pop-outs, or scaling. Sealing or routine maintenance recommended. RSL = 13-18 years.

Fair – Pavement has joint or crack spalling, and/or faulting, along with cracking at corners with broken pieces. Any Patches are in fair condition and faulting is at a minimum. Preventative maintenance recommended. RSL = 7-12 years.

Poor - Joints and cracks are open 1 inch, spalled, or patched. Faulting is more severe. Rehabilitation recommended. RSL = 1-6 years.

Failed - Most slabs have failed structurally, and faulting is severe. Reconstruction recommended. RSL = 0 years.11-9

The following table shows the relationship between RSL and condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Asphalt and Concrete Pavements)								
	FAILED	POOR		FAIR		GOOD		EXCELLENT
RSL Years	0	1-3	4-6	7-9	10-12	13-15	16-18	19-20

Gravel and Native

Excellent - Newly constructed road that has been constructed properly with proper crown, drainage and gravel layer. Little or no distress. No maintenance recommended. RSL = 8-10 years.

Good - Crown, drainage provisions, and gravel layer are in good condition. Distress limited to traffic effects such as dust, loose aggregate, and low severity corrugations (wash boarding). RSL = 5-7 years.

Fair - Adequate drainage and crown through majority of roadway. Crown repair, ditch improvement may be necessary. Road has more severe corrugations and potholes. Preventative maintenance recommended. RSL = 3-4 years.

Poor - Travel at slow speeds is necessary. Additional gravel layer needed to carry traffic. Poor crown. Ditching is inadequate and rutting is extensive and severe. Rehabilitation recommended. RSL = 1-2 years.

Failed - Travel is difficult, and road may be closed at times. Rutting and Corrugations are very severe. Total Reconstruction of road is recommended. RSL = 0 years.

The following table shows the RSL values for gravel and native roads in terms of excellent, good, fair, poor, and failed condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Gravel and Native Surfaces)					
	FAILED	POOR	FAIR	GOOD	EXCELLENT
RSL Years	0	1-2	3-4	5-7	8-10